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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|-------------------|
| 10/020,491 | 12/11/2001 | Chuong D. Vu | 45313/PYI/V165 | 6752 |
| 23363 | 7590 | 01/09/2006 | EXAMINER | |
| CHRISTIE, PARKER & HALE, LLP PO BOX 7068 PASADENA, CA 91109-7068 | | | | FERRIS, DERRICK W |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2663 | |

DATE MAILED: 01/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/020,491 | VU, CHUONG D. | |
| | Examiner | Art Unit | |
| | Derrick W. Ferris | 2663 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 11 December 2001.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-48 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-48 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 11 December 2001 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

| | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____. | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____. |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. **Claims 30, 37 and 38** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular, **claim 30** lacks proper antecedent basis for “*the predetermined location*”. It appears the claims should probably depend on claim 27. In particular, **claims 37 and 38** lack proper antecedent basis for “*the portion indicators*”. It appears the claims should dependent on claim 36.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country, or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. **Claims 1, 7-10, 24, 27, 31, 32, and 45-47** are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,367,520 A to *Cordell*.

As to **claim 1**, with respect to a plurality of crossbar devices, see e.g., the switch planes 32 in figure 3 of *Cordell*. With respect to a plurality of queues configured to receive data, see e.g., FIFO input buffers in figure 5. With respect to a load balancer coupled to the plurality of queues and configured to determine an amount of data in each of the plurality of queues and to send the data to specific ones of the plurality of crossbar

devices based on the amount of data in each queues, see e.g., the occupancy 32 in figure 5 with respect to the path controller 23. In addition, see e.g., column 9, line 34 -column 10, line 30 with respect to the statistical distribution of queue occupancies (i.e., load balancing).

As to **claim 7**, see the occupancy measurement in figure 5 and see e.g., column 9, line 34 -column 10, line 30.

As to **claim 8**, in addition to the reasoning for rejecting claim 7, the predetermined order is the statistical distribution.

As to **claim 9**, in addition to the reasoning for rejecting claim 7, the amount of data is the occupancy.

As to **claim 10**, see similar reasoning for the rejection to claim 8.

As to **claim 24**, see e.g., column 19, lines 10-17 with respect to switch planes that fail. In particular, if one of the switch planes fail, the flow is re-routed. See also column 15, lines 15-28 with respect to failure status.

As to **claim 27**, additional crossbars are inherently taught by the reference since adding additional crossbars are still supported since the load balancing is performed dynamically. See also e.g., column 9, lines 57-67 of *Cordell*.

As to **claim 31**, the processor could be e.g., path controller, or XPT config, see e.g., figure 5.

As to **claim 32**, see similar rejection to claim 1. In addition, with respect to based on priority, the cells are placed in the input queues in part based on input concentration such that the queues have an associated priority given a reasonable but broad

interpretation in view of applicant's specification, see e.g., column 15, lines 15-30 of *Cordell*.

As to **claim 45**, see similar rejection to claim 24.

As to **claim 46**, see similar rejection to claim 24.

As to **claim 47**, additional crossbars are inherently taught by the reference since adding additional crossbars are still supported since the load balancing is performed dynamically. See also e.g., column 9, lines 57-67 of *Cordell*.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 2-6, 33-35 and 48** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,367,520 A to *Cordell* in view of "Expandable ATOM Switch Architecture (XATOM) for ATM LANS" to *Fan et al.* ("Fan").

As such to **claim 2**, *Cordell* discloses priority queuing but is silent or deficient to the further limitation of wherein the plurality of comprises a high priority queue and a plurality of lower priority queues. In particular, *Cordell* teaches one input queue for each cross-bar switch, see e.g., figure 3.

Fan teaches the further recited limitation above at e.g., Section 3.2.1 starting on page 405 and shown e.g., in figures 5a and 5b.

The proposed modification of the above-applied reference(s) necessary to arrive at the claimed subject matter would be to modify *Cordell* by clarifying that the queues can further carry prioritized traffic.

As such, examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to include the above limitation. In particular, the motivation for modifying the reference or to combine the reference teachings would be to prioritize traffic. In particular, *Fan* cures the above-cited deficiency by providing a motivation found at e.g., at e.g., Section 3.2.1 starting on page 405 and shown e.g., in figures 5a and 5b. Second, there would be a reasonable expectation of success since both references teach ATM.

As to **claim 3**, see the references in combination where the guaranteed priority queue as taught by *Fan* is the high priority queue.

As to **claims 4-6**, the queues are serviced based on priority, see e.g., section 3.2.1 starting on page 405.

As to **claim 33**, see similar rejection to claim 2.

As to **claim 34**, see similar rejection to claim 3.

As to **claim 35**, see similar rejection to claim 4.

As to **claim 48**, see similar rejection to claim 2.

7. **Claims 11-14 and 36-38** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,367,520 A to *Cordell* in view of U.S. Patent Application 2002/0141427 A1 to *McAlpine*.

As to **claim 11**, *Cordell* teaches using a threshold, see e.g., column 10, lines 3-30 but is silent or deficient to the further limitation of wherein the occupancy levels are high, medium, low and empty.

McAlpine teaches the above limitation at e.g., paragraphs 0036 and 0037 on page 3 and paragraph 0067 on page 7 with respect to virtual input and output queues. In particular, *McAlpine* teaches that multiple thresholds can be used such as no mark, low mark, mid-mark, and high mark.

The proposed modification of the above-applied reference(s) necessary to arrive at the claimed subject matter would be to modify *Cordell* by clarifying that using multiple threshold levels are well known in the art.

As such, examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to include the above limitation. In particular, the motivation for modifying the reference or to combine the reference teachings would be to define a finer granularity with respect to the queue threshold. In particular, *McAlpine* cures the above-cited deficiency by providing a motivation found at e.g., paragraphs 0036 and 0037 on page 3.

As to **claim 12**, see similar rejection to claim 11 where the plurality of portions are the different watermarks for each queue.

As to **claim 13**, see similar rejection to claim 11 where the watermarks are predetermined.

As to **claim 14**, see similar rejection to claim 10

As to **claim 36**, see similar rejection to claim 11.

As to **claim 37**, see similar rejection to claim 12.

As to **claim 38**, see similar rejection to claim 13.

8. **Claims 15-23, 39 and 40-44** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,367,520 A to *Cordell* in view of “Expandable ATOM Switch Architecture (XATOM) for ATM LANS” to *Fan et al.* (“*Fan*”) and in further view of U.S. Patent Application 2002/0141427 A1 to *McAlpine*.

As to **claim 15**, see similar rejection to claim 11.

As to **claim 16**, see similar rejection to claim 11 where the plurality of portions are the different watermarks for each queue.

As to **claims 17-21**, data is transmitted based on priority and watermark thus meeting the claim limitation.

As to **claim 22**, see similar rejection to claim 11 where the plurality of portions are the different watermarks for each queue.

As to **claim 23**, see similar rejection to claims 17-21.

As to **claim 39**, see similar rejection to claim 11.

As to **claims 40-44**, see similar rejection to claims 17-21.

9. **Claims 25, 26, and 28-30** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,367,520 A to *Cordell* in view of U.S. Patent No. 6,871,347 B2 to *Hay*.

As such to **claim 25**, *Cordell* discloses detecting failed switched planes but is silent on how the particular failure is detected, see e.g., column 19, lines 6-26.

Hay teaches the further recited limitation above at e.g., the abstract.

The proposed modification of the above-applied reference(s) necessary to arrive at the claimed subject matter would be to modify *Cordell* by clarifying that failure detection using keep alive signals is well known in the art.

As such, examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to include the above limitation. In particular, the motivation for modifying the reference or to combine the reference teachings would be to keep the connection alive. In particular, *Hay* cures the above-cited deficiency by providing a motivation found at e.g., the abstract.

As to **claim 26**, see e.g., figure 3 at box 310 with respect to setting a time frame in order to receive the response messages.

As to **claims 28-29**, see similar rejection to claim 25 where requests and responses are periodically sent for all nodes including new nodes.

As to **claim 30**, see e.g., column 8, lines 57-67 of *Cordell* with respect to adding an address offset.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- US005355372A is relevant to at least the anticipated claims above, see e.g., figure 5 in view of figure 3.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Derrick W. Ferris whose telephone number is (571) 272-3123. The examiner can normally be reached on M-F 9 A.M. - 4:30 P.M. E.S.T.

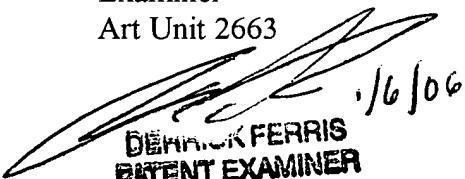
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571)272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Derrick W. Ferris
Examiner
Art Unit 2663

DERRICK FERRIS
PATENT EXAMINER


DWF


.16/06